WHAT IS CLAIMED IS:

1. A process for loading a biological sample comprising;

loading by fluid phase endocytosis a biological sample with a solute and dimethylsulfoxide to produce an internally loaded biological sample.

2. The process of Claim 1 wherein said loading a biological sample by fluid phase endocytosis comprises fusing within the biological sample a first matter with a second matter to produce a fused matter.

3. The process of Claim 2 wherein said first matter comprises the solute and dimethylsulfoxide.

4. The process of Claim 2 wherein said first matter comprises a vesicle having the solute and dimethylsulfoxide.

5. The process of Claim 2 wherein said second matter comprises a lysosome.

6. The process of Claim 4 wherein said second matter comprises a lysosome.

7. The process of Claim 2 wherein said fused matter comprises the solute and dimethylsulfoxide.

8. The process of Claim 6 wherein said fused matter comprises the solute and dimethylsulfoxide.

9. The process of Claim 2 wherein said loading a biological sample by fluid phase endocytosis additionally comprises

transferring the solute and dimethylsulfoxide from the fused matter within the biological sample.

10. The process of Claim 8 wherein said loading a biological sample by fluid phase endocytosis additionally comprises transferring the solute and dimethylsulfoxide from the fused matter within the biological sample.

11. The process of Claim 9 wherein the solute and dimethylsulfoxide is transferred from the fused matter into a cytoplasm within the biological sample.

12. The process of Claim 10 wherein the solute and dimethylsulfoxide is transferred from the fused matter into a cytoplasm within the biological sample.

13. The process of Claim 2 wherein said fused matter comprises a lower pH than a pH of the first matter.

14. The process of Claim 1 wherein said biological sample includes a biological sample selected from a group of biological samples comprising a platelet and a cell.

15. The process of Claim 1 wherein said solute comprises trehalose.

16. A biological sample produced in accordance with the process of Claim 1.

17. A process for preparing a dehydrated biological sample comprising:

providing a biological sample selected from a mammalian species;

loading the biological sample with a solute and dimethylsulfoxide to produce a loaded biological sample; and

drying the loaded biological sample to produce a dehydrated biological sample.

18. The process of Claim 17 wherein said loading of the biological sample with a solute and dimethylsulfoxide comprises loading by fluid phase endocytosis of the biological sample with an oligosaccharide and dimethylsulfoxide from an oligosaccharide solution having the oligosaccharide and the dimethylsulfoxide.

19. The process of Claim 18 wherein said oligosaccharide comprises trehalose.

20. The process of Claim 19 wherein said drying of the loaded biological sample comprises drying the biological sample until the loaded biological sample has a water content ranging from about 0.3 grams of water per gram of dry weight biological sample to about 2.7 grams of water per gram of dry weight biological sample.

21. The process of Claim 18 wherein said oligosaccharide solution comprises at least about 0.10 weight percent of dimethylsulfoxide.

22. The process of Claim 20 wherein said drying comprises air drying.

23. The process of Claim 17 wherein said biological sample comprises mesenchymal stem cells.

24. A method for increasing the survival of a biological sample comprising:

providing a biological sample;

loading the biological sample with a carbohydrate and dimethylsulfoxide to produce a loaded biological sample; and

drying the loaded biological sample while maintaining a residual water content in the biological sample of at least about 0.01 gram water per gram of dry weight of biological sample to increase survival of the biological sample.

25. The method of Claim 24 additionally comprising

storing the dehydrated loaded biological sample to produce a stored biological sample; and

rehydrating the stored biological sample.

26. The method of Claim 24 wherein said biological sample comprises a mammalian biological sample.

27. The method of Claim 24 wherein said drying comprises drying the biological sample until the loaded biological sample has a water content ranging from about 0.3 grams of water per gram of dry weight biological sample to about 2.7 grams of water per gram of dry weight biological sample.

28. A process for improving intracellular distribution of a solute in a biological sample comprising:

providing a biological sample; and

loading the biological sample with a carbohydrate and dimethylsulfoxide to produce a loaded biological sample having improved intracellular distribution over the biological sample having been loaded with the carbohydrate but without the dimethylsulfoxide.

29. The process of Claim 28 wherein said biological sample comprises a fraction selected from the group of fractions comprising a mitochondrial fraction, a lysosomal frantion, and mixtures thereof.

30. The process of Claim 29 wherein said intracellular distribution is improved in said fraction.

31. A method for increasing the survival of a biological sample comprising:

providing a biological sample;

loading the biological sample with a carbohydrate to produce a loaded biological sample; and

air drying the loaded biological sample while maintaining a residual water content in the biological sample of less than or equal to about 3.0 grams of water per gram of dry weight of biological sample to increase survival of the biological sample over the biological sample having been freeze-dried.

32. The method of Claim 31 wherein said biological sample comprises a mesenchymal stem cell.

33. A solution for increasing the distribution of a solute in a biological sample comprising a solute, and at least about 0.10 % by weight of dimethylsulfoxide.